

Research and Development Program 3.4

**FY 1995
Research-Based
Personnel and Training
Study and Analysis
Program**



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13. ABSTRACT (Maximum 200 words) This document described the ARI FY 1995 Research-Based Personnel and Training Study and Analysis Program. Behavioral and social science expertise, knowledge and databases will be used to conduct short-term studies and analyses that directly support decision, policy or doctrine makers who make decisions affecting Army personnel.				
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FY 1995

Research-Based Personnel and Training Study and Analysis Program

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FOREWORD

ARI's FY95 Research-Based Personnel and Training Study and Analysis Program has been developed in response to increasing requests for timely, empirical behavioral science information and data upon which to base critical personnel and training decisions affecting the lives and careers of all Army enlisted, officer and civilian personnel.

The program described in Sections A and B addresses many of the most critical human resource issues facing the Army today. Personnel issues include: leader development, improved selection and classification measures and methods, the potential impact of economic/demographic and policy variables on enlistment and retention, and recruit marketing. Training issues include: component strategies for the Army's Combined Arms Training Strategy (CATS) and the cost-effective use of training resources.

Policy and procedures for the ARI Research-Based Study and Analysis Program are described in Section C.

OVERVIEW

Objective:

The objective of the Research-based Personnel and Training Study and Analysis program of the U. S. Army Research Institute (ARI) for the Behavioral and Social Sciences is to conduct studies and analyses, using behavioral and social sciences data and information, that provide a sound, empirical basis for making recommendations to support increasingly critical decisions concerning personnel and training policies and doctrine.

Methodology:

To achieve this objective, ARI uses behavioral and social science expertise, knowledge and databases to conduct short-term studies and analyses that will directly aid decision/policy/doctrine makers in making more informed, more timely decisions on issues concerning the Army's most costly resource, personnel.

Many of the study and analysis tools and techniques used in this program have been developed as part of the ARI Science and Technology program; others have been adapted from civilian survey tools and techniques.

This program uses existing data (e.g., from Combat Training Centers) where possible. New data are generated where required. Some databases initially developed to meet science and technology objectives have transitioned to this studies program. For surveys and analyses that are carried out on a recurring basis, databases are augmented and refined as required.

In some cases, study and analysis results help identify critical behavioral science questions that need to be answered in ARI's exploratory development and/or advanced development programs.

Program Characteristics
<ul style="list-style-type: none">o Responsive to rapidly changing Army manpower, personnel and training requirementso Uses behavioral science techniques to answer critical soldier-related issueso Short term (0-2 year) effortso Low risk; potentially high impacto Prioritized for the budget fiscal yearo High priority requests accepted during fiscal year

THE FY95 PROGRAM

In FY95 the ARI Research-based Personnel and Training Study and Analysis Program starts its fourth year. The FY95 program includes studies and analyses continuing from FY94, as well as 2 new studies and analyses accepted for the FY95 core program.

The program is organized by "task": one or more studies/analyses addressing a critical personnel or training issue. An individual study or analysis represents a "work unit" under a task.

Five study and analysis tasks will be executed by ARI's Manpower and Personnel Research Division (MPRD) and are described in Section A. ARI's Training Systems Research Division (TSRD) will execute two tasks which are described in Section B. In the case of FY94 work units that end in FY94 or carry over into FY95, descriptions briefly describe work unit status as of the end of FY94.

FY95 program tasks and work units are summarized on the following pages. This summary provides an overview of the critical issues that ARI is being asked to address, showing its scope and breadth. For each task the overall Objective is shown. Under each task, the Issues being addressed are presented. (Funding for FY94, FY95 and FY96 is summarized in Section D.)

OVERVIEW OF ARI FY 1995 STUDY AND ANALYSIS PROGRAM

Manpower and Personnel Research Division

LEADERSHIP AND ORGANIZATIONAL ANALYSIS (1131):

Objective: To provide information for decisions about leader development programs for current and future leadership requirements.

Analysis of Alternative Command Post Structures: What are the existing variations in command post structures, and what is the impact of these variations? (C94)¹

Critical Leader Development Factors in Support of the Art of Battle Command: What are the critical factors of leader development in support of the art of battle command? (C94)

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Gender-Integration of Basic Entry Training: What are trainees' and training cadre's attitudes about gender-integrated basic entry training? Are there different performance outcomes for male and female trainees in gender-integrated and gender-pure (all male, all female) squads? (C94)

Critical Leader Development Factors in CTC Data: What are the critical factors of leader development in support of the art of battle command? (C94)

Longitudinal Research on Officer Careers (LROC): What are the major factors that influence the career commitment and career intentions of junior officers as they progress toward key career decision points? (Con)

Army Career Transition Survey (ACTS): What are the major factors that influence soldiers' decisions to leave Army service and how satisfied were they with their service? (Con)

¹ : C94: Completed in FY94 Con: Continuing into FY95 N95: New in FY95

SOLDIER ATTITUDES AND OPINIONS (1132):

Objective: To identify trends in soldier attitudes and opinions as input for Army policy and program decision-makers.

Army Survey: What are the attitudes and opinions of the total Army with respect to issues related to the Army's six imperatives: Quality People, Training, Leader Development, Force Mix, Doctrine, and Modernization? (Con)

JOB SPECIFIC SELECTION AND CLASSIFICATION (1231):

Objective: To conduct studies which will provide recommendations leading to improvement of current procedures for enlisted selection and classification.

Improved NCO Promotion Procedures: What are the best measures to use in insuring that soldiers who are promoted to the NCO level are those who perform most effectively? (C94)

Self Development Test (SDT) Fairness Analyses: Is the Self Development Test (SDT) fair for all protected subgroups? (C94)

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Analyses of the Operational Self-Development Test (SDT): Is the operational SDT an effective test instrument in terms of (1) its relationship to other performance measures and (2) its fairness with respect to all protected subgroups? (N95)

PERSONNEL POLICY ANALYSIS (1331):

Objective: To determine the effects of alternative compensation and personnel policies upon enlistment, attrition, retention, and separation decisions and costs in an era of downsizing. To provide analytic tools for improving the match of enlisted applicants' aptitudes with the aptitude requirements of Army jobs.

Analysis of Enlistment, Reenlistment, Promotion and Separation Policies: How to manage the downsizing in an efficient and equitable manner. (Con)

Annual Updates of ARI Databases: Manpower databases configured to support research-based studies and analyses need to be updated on a routine basis. (Con)

Development of a Prototype Officer Personnel Inventory, Cost and Compensation (OPICC) Policy Analysis Model: In the present downsizing environment, there is an ongoing need for improved analysis capability in personnel and compensation policy and officer management. (C94)

Impact of a Smaller, CONUS-Based Army Upon Promotion, Education and Professional Development Systems: Viability and effectiveness of the existing promotion, education, and professional development systems in the smaller Army of the 1990's. (Con)

Development of a PC-Based Prototype Enlisted Personnel Allocation System (EPAS): Implementation of improved classification techniques through application of optimization techniques to person-job matching. (C94)

MARKETING AND ADVERTISING (1332):

Objective: Resolution of active and reserve recruit marketing issues for sustaining a quality force. Immediate issues include labor market competition and the influence of downsizing on recruiting.

The ARI Army Alumni Survey: To determine the best method to transition soldiers from military to civilian life. (Con)

Survey of Civilian Nurses: Analysis of reasons behind serious shortfall in the recruiting of nurses for the active and reserve components. (C94)

Training Systems Research Division

ARCHIVE: ANALYSES OF COMBAT TRAINING CENTER (CTC) PERFORMANCE (2131):

Objective: To provide answers to critical issues for the Combined Arms Training Strategy (CATS) and unit readiness assessment.

Strengths and Weaknesses in Indirect Fire, Air Defense and Mobility/Counter mobility Battlefield Operating Systems (BOS) Across the CTCs: What are current major unit performance strengths and weaknesses in these BOSs as demonstrated at the CTCs? (C94)

Lessons Learned by Observer/Controllers at CTCs: What Doctrine, Training, Organizational, Materiel, and Leadership (DOTML) lessons learned can be obtained from the oral histories of experienced observer/controllers at the National Training Center. (C94)

Combat Service Support (CSS) Training at the CTCs: Is Combat Service Support (CSS) training conducted with adequate battlefield fidelity at the Combat Training Centers (CTCs)? (C94)

6 **Training Aids, Devices, Simulators, and Simulations (TADSS) Study:** How often are currently fielded training devices used, and how effective do the users report the devices to be in support of their training requirements as reflected in training performance at the CTCs? (C94)

Trends in Unit Performance That May Be Linked to Changing Doctrine, Organization, etc.: How does the performance of units at Combat Training Centers (CTCs) change over time? (N95)

ANALYSES OF TRAINING CONDUCT AND TRAINING RESOURCE UTILIZATION (222S):

Objective: Analyses leading to recommendations concerning the effective and proper use of training resources.

Assessment of TRADOC School Staff Time for Instructional Delivery and Support Activities in TRADOC Schools: Do the TRADOC schools have sufficient staff resources to effectively conduct instruction, update current training programs, and design, develop and validate new training programs/products? (C94)

Analysis of Training Resource Reduction on Quality of TRADOC Graduates' Performance: What is the impact of reductions in training resources on the quality of TRADOC performance? (N95)

Section A

**Manpower and Personnel Research Division
FY95 Research-Based Study and Analysis Program**

**Director
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TASK 1131: LEADERSHIP AND ORGANIZATIONAL ANALYSIS

OBJECTIVE: To provide information for decisions about leader development programs for current and future leadership requirements.

FUNDING:	<u>FY94</u>	<u>FY95</u>	<u>FY96</u>
	439	392	0

Work Unit

(1131H03): Analysis of Alternative Command Post Structures

Sponsor: TRADOC (CAC-CD), BG Edward G. Anderson

Issue: What are the existing variations in command post structures, and what is the impact of these variations?

Approach: Available ARI ACCES (Army Command and Control Evaluation System) and BCTP information will be reviewed. These data will be augmented with interviews of division commanders and key staff to identify variations in commanders' perceptions of how command posts should be structured to provide the support they require. Based on these interviews, key components of variation and expected impact on command post effectiveness will be identified.

Utilization: Will support CAC-CD efforts to redesign division and corps command posts.

Est. Cost:	<u>FY94</u>	<u>FY95</u>	<u>FY96</u>	<u>TOTAL</u>
	36	0	0	36

State Date: 1st Quarter FY94 **End Date:** 3rd Quarter FY94

Status: Completed. The sponsor altered the project somewhat to look at the effects of digitization on the commander's reasoning processes. A report has been prepared citing the results of evaluations of digitization done in the Battle Command Battle Laboratory (BCBL) at Fort Leavenworth. This report will be used by the BCBL to aid in designing future evaluations.

Work Unit
(1131H04): Critical Leader Development Factors in Support of the Art of Battle Command

Sponsor: TRADOC (CAC-TNG), BG Joe N. Frazar, III

Issue: What are the critical factors of leader development in support of the art of battle command?

Approach: Information will be combined from Battle Command Training Program (BCTP) seminars, Army Command and Control Evaluation System (ACCES) reports, National Training Center (NTC) seminar on Art of Battle Command, previously conducted interviews with commanders in support of the School for Command Preparation (SCP), various ARI reports concerning leadership and command, and the Battle Command Battle Laboratory's (BCBL) focused rotation effort in the art of battle command. These sources will be used to derive a picture of the current attitudes regarding the art of battle command.

Utilization: Will support CTC trainers as coaches in the art of battle command and will provide information to BCCL as they continue to develop battle command concepts and experiments.

Est. Cost:	<u>FY94</u>	<u>FY95</u>	<u>FY96</u>	<u>TOTAL</u>
	31	0	0	31

Start Date: 1st Quarter FY94 **End Date:** 3rd Quarter FY94

Status: Completed. Report includes sections on battle command, battle command competencies, leadership, and cognitive processes. Source cited in report include battle command focused rotation at NTC (94-08), Battle Command Training Program seminars, Desert Storm commander interviews, U.S. Army War College interviews conducted by Battle Command Battle Lab, Army Research Institute studies, doctrinal manuals, and civilian psychology, educational, and organizational literature.

Work Unit**(1131C16):** Gender-Integration of Basic Entry Training**Sponsor:** TRADOC CG, GEN Frederick M. Franks, Jr.**Issue:** What are trainees' and training cadre's attitudes about gender-integrated basic entry training? Are there different performance outcomes for male and female trainees in gender-integrated and gender-pure (all male, all female) squads?**Approach:** Collect information on the attitudes and opinions of trainees and training cadre about basic training in gender-pure and gender-integrated squads; describe training activities in the squads; and identify changes--if any--in attitudes towards training and the performances of females and males.**Utilization:** The results will be used by TRADOC to determine Army policy on gender integration of basic entry training.

Est. Cost:	<u>FY94</u>	<u>FY95</u>	<u>FY96</u>	<u>TOTAL</u>
	157	0	0	157

Start Date: 4th Quarter FY93 **End Date:** 2nd Quarter FY94**Status:** Baseline survey data on trainee attitudes toward the Army and women in the Army were administered during August 1993. Field observations of training in squads were conducted during August and September. Post-test survey questionnaires for trainees and training cadre were completed in November. Final briefings for Fort Jackson and CG, TRADOC were conducted in February and March. The Chief of Staff was briefed in May 1994. Final report will be submitted 1st Quarter FY95.

Work Unit
(1131C17): Critical Leader Development Factors in CTC Data

Sponsor: TRADOC (CAC-TNG), BG Joe N. Frazar, III

Issue: What are the critical factors of leader development in support of the art of battle command?

Approach: ARI-CTC archive materials will be analyzed to identify critical leader behaviors. Observer-controller comments from take-home packages and AARs which address the critical behaviors will be compiled. Findings will be analyzed to identify recurring strengths and weaknesses.

Utilization: Will support CTC trainers as coaches in the art of battle command and will provide information to BCBL as they continue to develop battle command concepts and experiments.

Est. Cost:	<u>FY94</u>	<u>FY95</u>	<u>FY96</u>	<u>TOTAL</u>
	50	0	0	50

Start Date: 1st Quarter FY94 **End Date:** 3rd Quarter FY94

Status: Work began in May, 1994 involving detailed examination of ten combat training center rotations. Trends in critical leader behaviors were analyzed.

Work Unit

(1131C19): Longitudinal Research on Officer Careers (LROC)

Sponsor: ODCSPER (DMPM), MG Frederick E. Vollrath

Issue: What are the major factors that influence the career commitment and career intentions of junior officers as they progress toward key career decision points?

Approach: Develop and administer a follow up survey to those officers who have participated in prior LROC surveys. Perform longitudinal analyses of the factors affecting career commitment and intentions at various stages of career development.

Utilization: DMPM will use to set/modify personnel policy.

Est. Cost:	<u>FY94</u>	<u>FY95</u>	<u>FY96</u>	<u>TOTAL</u>
	85	310	0	395

Start Date: 1st Quarter FY94 **End Date:** 4th Quarter FY95

Status: The contract to support this effort was started in June, 1994. The purpose of the project is to develop the tools to provide policy relevant information to the Army personnel community about the career decisions and paths of Army officers and the events and conditions which influence them. The project is starting with analyses (using the LROC data base) addressing key personnel issues. Next interviews will be conducted with Army personnel decision makers to determine what kinds of issues will be most critical to be addressed using longitudinal information. Interviewing will be completed by November, 1994. The final phases of the effort will be to use the findings of the subsequent LROC surveys.

Work Unit**(1131C20):** Army Career Transition Survey (ACTS)**Sponsor:** ODCSPER (DMPM), MG Frederick E. Vollrath**Issue:** What are the major factors that influence soldiers' decisions to leave Army service and how satisfied were they with their service?**Approach:** Develop, test, and administer a new survey instrument to better assess sponsor information requirements. Develop and test new administration procedures to increase survey response rate.**Utilization:** DMPM will use results to set/modify personnel policies.

Est. Cost:	<u>FY94</u>	<u>FY95</u>	<u>FY96</u>	<u>TOTAL</u>
	80	82	0	162

Start Date: 1st Quarter FY94 **End Date:** 4th Quarter FY95

Status: The purpose of the project is to improve the utility of ACTS for senior Army policy makers by: (1) increasing the number and representativeness of those who complete the instrument and (2) making the questions that are more relevant to the actual types of policy decisions that the Army faces. The contract support for this effort started in April, 1994. To date, the contractor has been conducting interviews with two types of individuals: policy makers (to determine what information they need) and survey administrators (to how they do their work and what challenges they face). The work of changing the content and administrative procedures will begin once the interviews have been completed in early September.

TASK 1132: SOLDIER ATTITUDES AND OPINIONS

OBJECTIVE: To identify trends in soldier attitudes and opinions as input for Army policy and program decision-makers.

FUNDING:	<u>FY94</u>	<u>FY95</u>	<u>FY96</u>
	0	367	0

Work Unit
(1132H01): Army Survey

Sponsor: ODCSPER

Issue: What are the attitudes and opinions of the total Army with respect to issues related to the Army's six imperatives: Quality People, Training, Leader Development, Force Mix, Doctrine, and Modernization?

Approach: Develop, test, and administer a survey instrument to the total Army focusing on the Army imperatives.

Utilization: Results will be provided to the DCSPER and other senior leaders as input for policy and program decisions.

Est. Cost:	<u>FY94</u>	<u>FY95</u>	<u>FY96</u>	<u>TOTAL</u>
	0	367	0	367

Start Date: 4th Quarter FY94 **End Date:** 3rd Quarter FY96

Status: The purpose of this project is to provide a database of attitudes and opinions of the total Army with respect to issues related to the Army's six imperatives for use in studies for Army policy and program decision makers.

TASK 1231: JOB SPECIFIC SELECTION AND CLASSIFICATION

OBJECTIVE: To conduct studies which will provide recommendations leading to improvement of current procedures for enlisted selection and classification.

FUNDING:	<u>FY94</u>	<u>FY95</u>	<u>FY96</u>
	61	92	20

Work Unit

(1231H02): Improved NCO Promotion Procedures

Sponsor: ODCSPER (DMPM), MG Frederick E. Vollrath

Issue: What are the best measures to use in insuring that soldiers who are promoted to the NCO level are those who will perform most effectively?

Approach: Existing personnel records reflecting first tour performance will be linked with second tour performance data obtained from the Career Force project to determine which first tour measures best predict second tour performance.

Utilization: Results will be used to determine whether preliminary recommendations concerning changes to the Promotion Point Worksheet based on earlier analyses are supported or need to be modified.

Est. Cost:	<u>FY94</u>	<u>FY95</u>	<u>FY96</u>	<u>TOTAL</u>
	38	0	0	38

Start Date: 1st Quarter FY94 **End Date:** 3rd Quarter FY94

Status: Completed. The study was briefed to MG Vollrath, DMPM and to the DCSPER (LTG Carney). Results demonstrated that the current Promotion Point Worksheet was an effective predictor of later performance. No changes were recommended.

Work Unit**(1231H03):** Self Development Test (SDT) Fairness Analyses**Sponsor:** TRADOC (DCST), Dr. Brian Davis**Issue:** Is the Self Development Test (SDT) fair for all protected subgroups?**Approach:** Each Self Development Test will be examined for its impact on blacks, whites, males and females. Tests which show the greatest difference between blacks and whites will be examined for bias. Analyses will focus on those items which show the greatest difference for the relevant race and gender subgroups.**Utilization:** The fairness analyses will be used as a basis for determining whether the tests meet appropriate standards of fairness to allow their use in the Enlisted Personnel Management System.

Est. Cost:	<u>FY94</u>	<u>FY95</u>	<u>FY96</u>	<u>TOTAL</u>
	23	0	0	23

Start Date: 1st Quarter FY94 **End Date:** 1st Quarter FY94**Status:** Completed. Analyses generated no support for a general bias in the items in the instruments examined. On the basis of these analyses, conducted on those tests showing the largest subgroup differences, it is also possible to cautiously suggest that if any bias exists in the remaining SQT tests, it would be very minimal at most.

Work Unit**(1231H04):** Analyses of the Operational Self-Development Test (SDT)**Sponsor:** TRADOC (DCST), Mr. Robert E. Seger**Issue:** Is the operational SDT an effective test instrument in terms of (1) its relationship to other performance measures and (2) its fairness with respect to all protected subgroups?**Approach:** The relationship between SDT and other performance measures will be examined using data from the Career Force database, which has performance data on a large number of soldiers. With respect to the fairness issue, tests which show the greatest difference between blacks and whites will be identified and examined for bias. Earlier analyses conducted on an experimental administration of the SDT did not show bias; the planned analyses will examine whether the same results hold when the test is administered operationally.**Utilization:** Results will be used to help determine whether any changes are needed with respect to the manner in which the SDT is used in the Enlisted Personnel Management System (EPAS).

Est. Cost:	<u>FY94</u>	<u>FY95</u>	<u>FY96</u>	<u>TOTAL</u>
	0	92	20	112

Start Date: 1st Quarter FY95 **End Date:** 2nd Quarter FY96**Status:** New Start.

TASK 1331: PERSONNEL POLICY ANALYSIS

OBJECTIVE: To determine the effects of alternative compensation and personnel policies upon enlistment, attrition, retention, and separation decisions and costs in an era of downsizing. To provide analytic tools for improving the match of enlisted applicants' aptitudes with the aptitude requirements of Army jobs.

FUNDING:	<u>FY94</u>	<u>FY95</u>	<u>FY96</u>
	555	339	0

Work Unit

(1331H02): Analysis of Enlistment, Reenlistment, Promotion, and Separation Policies

Sponsor: ODCSPER (DMPM), MG Frederick E. Vollrath

Issue: How to manage the downsizing in an efficient and equitable manner

Approach: To extend resource allocation models of active duty recruiting to reserve recruiting; to examine the impact of downsizing upon officer quality; to enhance capability to examine the effects of various officer reenlistment and separation policies; to develop statistical tabulations for the use of selection boards in monitoring equity; to determine the feasibility and approach to collection of civilian earnings data of military separates.

Utilization: Results will assist USAREC, the Army Secretariat, and DMPM in planning, policy making and monitoring functions.

Est. Cost:	<u>FY94</u>	<u>FY95</u>	<u>FY96</u>	<u>TOTAL</u>
	96	277	0	373

Start Date: 1st Quarter FY 94 **End Date:** 4th Quarter FY95

Status: (a) Implications of downsizing for promotion and professional development: examining historical PCS travel by source/destination and type of unit; translating geographic inventory allocation LP model into user-friendly code. (b) Downsizing, officer promotion and quality: research concept and model specification completed; building internal support and seeking access to officer performance data; descriptive tabulations report on promotion outcomes completed and operational testing underway. (c) Examination of personnel management policies: in process of calibrating EPICC model to current baseline; designing training lessons for new-to-the job analysts using EPICC and OPICC.

Work Unit**(1331C02):** Annual Updates of ARI Databases**Sponsor:** ODCSPER (DMPM), MG Frederick E. Vollrath**Issue:** Manpower databases configured to support research-based studies and analysis need to be updated on a routine basis.**Approach:** To build and update a database on Army College Fund usage combining VA, Army, and actuarial records for FY 93 and FY 94. To update the Enlisted Panel Research Database (EPRDB); the Officer Longitudinal Research Data Base (OLRDB) and the Officer Administrative Data Base (LOADB) for FY 93.**Utilization:** Assist in determining and defending recruiting budget; monitor ACF program costs assessed by DoD actuary; estimate usage and costs of any enhancements to existing ACF program. Uses include analyses in support of TAS requests; determination of officer and enlisted characteristics and behavior; development of the Annualized Cost of Leaving (ACOL-2) models.

Est. Cost:	<u>FY94</u>	<u>FY95</u>	<u>FY96</u>	<u>TOTAL</u>
	40	57	0	97

Start Date: 1st Quarter FY93 **End Date:** 3rd Quarter FY95**Status:** The ACF usage databases have been updated to be current through the second quarter of FY 93; this work was initiated in FY92 under Work Unit 2106C2, "Army College Fund Database". The OLRDB has been updated to be current through FY 92. The OADB has been developed and is being brought up to date through FY 92. The EPRDB has been updated through FY 92. Data on 1992 participation in early separation programs have been matched into the EPRDB, OLRDB, and OADB records. CD-ROM copies of the OLRDB and EPRDB mainframe tape files were completed in July 94, along with software to facilitate extraction from these large data files.

Work Unit
(1331C14): Development of a Prototype Officer Personnel Inventory, Cost and Compensation (OPICC) Policy Analysis Model

Sponsor: ODCSPER (DMPM), MG Frederick E. Vollrath

Issue: In the present downsizing environment, there is an ongoing need for improved analysis capability in personnel and compensation policy and officer management.

Approach: The approach is to design, code, test, and implement a PC-based, automated policy analysis model. Model development will occur in stages. Preliminary retention equations have already been estimated. Core capabilities will be built for a prototype version which will be thoroughly exercised by users. Enhancements can be added in later stages.

Utilization: The prototype version will be suitable for examining the effects of compensation and other personnel policy changes upon the inventory of Army officers, and for predicting these effects over a seven year planning horizon. With the production version the corresponding impact upon costs can also be estimated.

Est. Cost:	<u>FY94</u>	<u>FY95</u>	<u>FY96</u>	<u>TOTAL</u>
	143	0	0	143

Start Date: 4th Quarter FY93 **End Date:** 3rd Quarter FY94

Status: A prototype PC-based policy analysis model has been developed, and is currently undergoing validation and testing. The underlying retention equations are estimated at an all-Army level (i.e., OPMD branches), but the user-friendly interface can accommodate any aggregation level.

Work Unit

(1331C15): Impact of a Smaller, CONUS-Based Army Upon Promotion, Education, and Professional Development Systems

Sponsor: ODCSPER (DMPM), MG Frederick E. Vollrath

Issue: Viability and effectiveness of the existing promotion, education, and professional development systems in the smaller Army of the 1990's.

Approach: To understand and describe the operational interrelationships among promotion, education, and professional development systems. To utilize existing (or build new) policy analysis models suitable to address the issues. To analyze the implications of a smaller, CONUS based Army with longer tours for the operations of the enlisted promotion system and the enlisted education and officer professional development systems under alternative permanent change of station (PCS) budget scenarios.

Est. Cost:	<u>FY94</u>	<u>FY95</u>	<u>FY96</u>	<u>TOTAL</u>
	77	5	0	82

Start Date: 1st Quarter FY94 **End Date:** 2nd Quarter FY95

Status: Started May 94. Policy analysis framework has been developed. A variety of converging empirical work is underway: (a) examination of origin/destination of PCS moves; (b) preparation of linear programming model to examine interrelationships between force structure and distribution, tour lengths, promotion policy, etc.; (c) enhancement of Army AI Center "Army Flow" model to examine same interrelationships.

Work unit

(1331C16): Development of a PC-Based Prototype Enlisted Personnel Allocation System (EPAS)

Sponsor: DCSPER (DMPM), MG Frederick E. Vollrath

Issue: The considerable efficiency gains and cost savings from the application of optimization techniques to the person - job match were shown in research sponsored by ARI from 1982-89. The Army's current approach to classification should be improved.

Approach: In moving towards implementation of EPAS, the first step is to incorporate the research into a PC-based model in order to demonstrate the benefits to decision-makers in a tangible way. The proposed PC-based model will utilize the latest developments in optimization techniques and operate on the "full-size" classification problem. Instead of just avoiding assigning the least qualified people to jobs, as the present system does, EPAS assigns the best qualified people and distributes quality across MOS.

Utilization: The prototype version will be evaluated and a go/no-go decision will be made for a production system.

Est. Cost:	<u>FY94</u>	<u>FY95</u>	<u>FY96</u>	<u>TOTAL</u>
	199	0	0	199

Start Date: 4th Quarter FY93 **End Date:** 4th Quarter FY94

Status: A feasibility study for building a PC-based model was completed 4th Quarter FY93. Work subsequently began on the design and implementation of a linear programming model that optimizes the person-job match. The model is designed to work in both a planning mode and classification simulation mode. At the present time (August 94) a 1992-93 data base of applicants and training requirements has been reconstructed, the model has successfully solved the planning mode problem, and testing continues.

TASK 1332: MARKETING AND ADVERTISING

OBJECTIVE: Resolution of active and reserve recruit marketing issues for sustaining a quality force. Immediate issues include labor market competition and the influence of downsizing on recruiting.

FUNDING:	<u>FY94</u>	<u>FY95</u>	<u>FY96</u>
	345	188	0

Work Unit

(1332C01): The ARI Army Alumni Survey

Sponsor: USAREC CG, MG Kenneth W. Simpson

Issue: To determine the best method to transition soldiers from military to civilian life.

Approach: The Army is facing the transition of large numbers of soldiers (including combat veterans) of an all volunteer Army from military to civilian life. Monitoring this transition is vital to guide USAREC's future recruitment policy. The Alumni Survey is a longitudinal effort that will resurvey veterans who completed the New Recruit Survey at accessioning during the past decade.

Utilization: The data gathered by this survey will result in more effective transition programs that will create more good will for the Army and a greater propensity for enlistment.

Est. Cost:	<u>FY94</u>	<u>FY95</u>	<u>FY96</u>	<u>TOTAL</u>
	185	188	0	373

Start Date: 4th Quarter FY93 **End Date:** 4th Quarter FY95

Status: The ARI survey concentrates on the post-service experience of former active duty soldiers. This past year has been spent developing the survey tools needed to accomplish this task: a sampling plan, a survey instrument, a coding system for organizing the survey responses, and a data tape which can be analyzed by the military.

Work Unit**(1332C03):** Survey of Civilian Nurses**Sponsor:** USAREC CG, MG Kenneth W. Simpson**Issue:** The Army has not achieved its objectives in recruiting nurses. The shortfall is extremely serious for both the active and reserve components.**Approach:** To administer a survey to employed civilian nurses and nursing students.**Utilization:** Identify the least-cost incentives for recruiting nurses into the Army.

Est. Cost:	<u>FY94</u>	<u>FY95</u>	<u>FY96</u>	<u>TOTAL</u>
	160	0	0	160

Start Date: 2nd Quarter FY92 **End Date:** 3rd Quarter FY94

Status: The purpose of this project is to provide Army decision makers with information which will help the Army attract and retain nurses in the Army Nurse Corps. The first product was a review of the professional literature dealing with the nursing profession (e.g., salaries, areas of specialization, career patterns, and basic demographic facts). This report was delivered in January, 1994. The project has now moved to reporting of analyses of three databases: (1) a survey of civilian Registered Nurses, (2) a survey of nursing students, and (3) a survey of USAR nurses who were activated for service during Operation Desert Storm. The databases, codebooks, and preliminary analyses for these first two surveys have been delivered. The final reports on these two contractor generated surveys is expected August, 1994. The first two were administered by the contractor. The databases, codebooks, and preliminary analyses are complete on these efforts. The final report is expected September, 1994. The contract is being extended (at no cost) until 30 September, 1994 so that the contractor can complete the analyses and report on the ARI furnished data on Operation Desert Storm.

Section B

**Training Systems Research Division
FY95 Research-Based Study and Analysis Program**

**Director
Dr. Jack H. Hiller
(703) 274-5574
DSN 284-5574**

**TASK 2131: ARCHIVE: ANALYSES OF COMBAT TRAINING CENTER
(CTC) PERFORMANCE**

OBJECTIVE: To provide answers to critical issues for the Combined Arms Training Strategy (CATS) and unit readiness assessment.

FUNDING:	<u>FY94</u>	<u>FY95</u>	<u>FY96</u>
	862	731	716

Work Unit

(2131C01): Strengths and Weaknesses in Indirect Fire, Air Defense and Mobility/Counter mobility Battlefield Operating Systems (BOS) Across the CTCs

Sponsor: TRADOC (CAC-TNG), BG Joe N. Frazar, III

Issue: What are current major unit performance strengths and weaknesses in these BOSs as demonstrated at the CTCs?

Approach: A series of analyses of existing data from the NTC, JRTC, and CMTC will be performed to determine major areas of common unit performance strengths and weakness, with an emphasis on weaknesses, for Active Components and Reserve Components.

Utilization: CAC-TNG will use this information for development of the Combined Arms Training Strategy CATS for the Active and Reserve components.

Est. Cost:	<u>FY94</u>	<u>FY95</u>	<u>FY96</u>	<u>TOTAL</u>
	403	0	0	403

Start Date: 2nd Quarter FY92 **End Date:** 4th Quarter FY94

Status: During FY93, a Data Dictionary was compiled and standards for database development were established. Two new databases were added, Oral Histories and National Guard. Training Observation Summaries were developed for NTC Rotations 93-02 through 93-10. A document was prepared describing the architecture for the new network. Data collection and analysis support was provided during the digital rotation (94-07) at the NTC. These support activities included the collection of training information using the Electronic Collection Instrument and analyses of digital data by BOS on a quick turn around basis. The major effort of this work unit is to produce trend reports using CTC archive data, the final due September 1994.

Work Unit

(2131H03): Lessons Learned by Observer/Controllers at CTCs

Sponsor: TRADOC (CAC-TNG), BG Joe N. Frazar, III

Issue: What Doctrine, Training, Organizational, Materiel, and Leadership (DOTML) lessons learned can be obtained from the oral histories of experienced observer/controllers at the National Training Center?

Approach: A database of O/C oral histories has been collected in routine O/C debriefings at the conclusion of their tour at the National Training Center. This data base should provide a rich source of DOTML information from some of the most experienced trainers in the Army.

Utilization: CAC-T will incorporate the results of this study in their Army Lessons Learned program.

Est. Cost:	<u>FY94</u>	<u>FY95</u>	<u>FY96</u>	<u>TOTAL</u>
	90	0	0	90

Start Date: 1st Quarter FY92

End Date: 4th Quarter FY94

Status: An initial sample of 25 interviews conducted among NTC Observer/Controllers and members of the OPFOR has been completed. Efforts to code and categorize these interviews into a PC based database have proven unsuccessful. Accordingly, analyses of the information contained in these interviews has proceeded much slower than anticipated. During FY94 analyses of comments made by the O/C interviewees have focused on issues dealing with observed strengths and weaknesses of BLUEFORCE units in terms of Command, Control and Communication at Battalion level. A report of initial findings will be provided to the sponsor by the end of FY94.

Work Unit

(2131H06): Combat Service Support (CSS) Training at the CTCs

Sponsor: TRADOC (CAC-TNG), BG Joe N. Frazar, III

Issue: Is Combat Service Support (CSS) training conducted with adequate battlefield fidelity at the Combat Training Centers (CTCs)?

Approach: A recently developed list of Critical Combat Functions (CCFs) for Combat Service Support (CSS) tasks within the forward support battalion (FSB) will be used to assess the fidelity of the simulation for CSS at the National Training Center (NTC). An analysis of the data collected will be made to determine training scenario deficiencies. More specifically, an analysis will be done on the degree to which battlefield realism (e.g., the extent of pressure to perform under difficult conditions) is a part of CSS scenarios. A report on these analyses will be submitted at the end of FY94.

Utilization: Initially, forward support battalions at the NTC, and later at other CTCs, will improve battlefield performance in CSS tasks based upon improved realism of the battlefield scenarios, and training feedback.

Est. Cost:	<u>FY94</u>	<u>FY95</u>	<u>FY96</u>	<u>TOTAL</u>
	94	0	0	94

Start Date: 1st Quarter FY94 **End Date:** 4th Quarter FY94

Status: Preliminary analyses have been completed to determine the scope and adequacy of data sources. Additional sections of the Take Home Packages will need to be examined to determine the completeness and reliability of CSS training data. Data collection and analysis will be completed and a draft report submitted in September 1994.

Work Unit

(2131H07): Training Aids, Devices, Simulators, and Simulations (TADSS) Study

Sponsor: TRADOC (DCST), Mr. Robert E. Seger

Issue: How often are currently fielded training devices used, and how effective do the users report the devices to be in support of their training requirements as reflected in training performance at the CTCs?

Approach: Given the mutual interests in training resourcing from ODCSOPS-Training, TRADOC-ATSC and STRAC, and FORSCOM, an advisory committee will be formed with representatives from each command. Given the uniqueness of each post, including FORSCOM and TRADOC installations, a broad sample of posts will be covered to determine current local procedures used (if any) to account for training aids, devices, simulators and simulations (TADSS) usage and local capabilities to support a standardized system. The basic procedure will consist of conducting structured interviews at each post with: (1) the training resourcing offices, e.g., TASC, Simulation Center, MILES Warehouse, etc.; and (2) the unit chain of command, i.e., G-3, S-3 Bde, Bn and Co Cdrs, company training NCO's, Plt Leader and PSG. A proposed system for logging TADSS usage rates, user satisfaction and recommendations for improvements on new TADSS or management procedures, will be provided along with a report of findings.

Utilization: U.S. Army Training Support Center will use the information obtained in this study to satisfy the requirements of AR 350-38 for annual assessments to be conducted to determine if devices are fulfilling their stated requirements; to determine requirements for modifications, additions, or deletions from current training device inventory; and to determine requirements for further studies or analyses.

Est. Cost:	<u>FY94</u>	<u>FY95</u>	<u>FY96</u>	<u>TOTAL</u>
	275	0	0	275

Start Date: 1st Quarter FY94 **End Date:** 4th Quarter FY94

Status: Data collection is completed at 7 of the 8 targeted installations (Ft. Bliss, Ft. Lewis, Ft. Campbell, Ft. Benning, Ft. Knox, Ft. Riley, and Ft. Stewart). Interview data from four installations have been transcribed and this phase will be complete by September 1994. It is projected that the construction and loading of the database will be complete within 2 weeks after data from the last installation (Ft. Hood) have been transcribed. The draft study report will be completed in October 1994.

Work Unit

(2131H08): Trends in Unit Performance That May Be Linked to Changing Doctrine, Organization, etc

Sponsor: TRADOC (CAC-TNG), BG Joe N. Frazar III;
TRADOC (DCSCD), MG Larry G. Lehowicz

Issue: How does the performance of units at Combat Training Centers (CTCs) change over time?

Approach: Trends will be based on qualitative and quantitative information which is: (1) resident in the CTC Research Archive located at the UCTRU, Monterey; (2) derived from interviews with CTC Observer/Controllers; and (3) obtained from use of Electronic Collection Instrument and other data collection methods. Battlefield Operating Systems, Combat Critical Functions and DOTMLs will provide the frameworks for the information included in the reports, published quarterly and distributed to the Army leadership.

Utilization: The quarterly performance trend reports will allow effective policy changes to be made quickly to ameliorate any negative trends, while positive trends will lead to sustainment of effective policies.

Est. Cost:	<u>FY94</u>	<u>FY95</u>	<u>FY96</u>	<u>TOTAL</u>
	0	731	716	1447

Start Date: 1st Quarter FY95 **End Date:** 4th Quarter FY96

Status: New Start.

**Task 222S: ANALYSES OF TRAINING CONDUCT
AND TRAINING RESOURCE UTILIZATION**

OBJECTIVE: Analyses leading to recommendations concerning the effective and proper use of training resources.

FUNDING:	<u>FY94</u>	<u>FY95</u>	<u>FY96</u>
	109	452	487

Work Unit

(222SH01): Assessment of TRADOC School Staff Time for Instructional Delivery and Support Activities in TRADOC Schools

Sponsor: TRADOC (DCST), Mr. Robert E. Seger

Issue: Do the TRADOC schools have sufficient staff resources to effectively conduct instruction, update current training programs, and design, develop and validate new training programs/products?

Approach: Data will be gathered from a selected sample (approximately 12) of the TRADOC schools. These data will be analyzed and compared with existing standards within TRADOC and against existing practices in similar schools in the Air Force and Navy. Cost benefit data will be provided from which to compare alternative solutions to the requirements of training support. More specifically, analyses will bear on the issue of quality as well as issues of implied and incurred costs.

Utilization: DCST will use this information for the development of policy relating to the sufficiency and allocation of the constrained staffing resources within TRADOC schools.

Est. Cost:	<u>FY94</u>	<u>FY95</u>	<u>FY96</u>	<u>TOTAL</u>
	109	0	0	109

Start Date: 1st Quarter FY94 **End Date:** 4th Quarter FY94

Status: Questionnaire data were gathered from a selected sample of 12 TRADOC schools on time requirements for: training design, development, and validation of new training programs and products; as well as requirements for updating current training programs. The results of this study will be presented in a briefing and Draft report to TRADOC in September 1994.

Work Unit

(222SH02): Analysis of Training Resource Reduction on the Quality of TRADOC Graduates' Performance

Sponsor: TRADOC (DCST), Mr. Robert E. Seger

Issue: What is the impact of reductions in training resources on the quality of TRADOC performance?

Approach: A multistage approach will be used to assess the effects of reduced training resources on training productivity. Stage one, assessment of the overall effects of the reduction of training resources, consists of: (1) the development of an analytic model; (2) the identification of objective measure(s) of soldier performance; (3) an in-depth comparison of 1988-90 and 1995-96 TRADOC graduates' performance on selected MOS measures to determine impact of resource reduction; and (4) application of the analytic models. Stage Two will assess the effects of changes in training policy on training productivity. Study results will be provided in a final report to the sponsor.

Utilization: Study results will provide Army planners with estimates of the impact of reduced resources on training productivity. The resultant models can be used as an analytic tool by Army planners to predict the consequences of future reductions in key resources on training capability of TRADOC.

Est. Cost:	<u>FY94</u>	<u>FY95</u>	<u>FY96</u>	<u>TOTAL</u>
	0	452	487	939

Start Date: 1st Quarter FY95 **End Date:** 4th Quarter FY96

Status: New Start.

Section C
Policy and Procedures

POLICY AND PROCEDURES

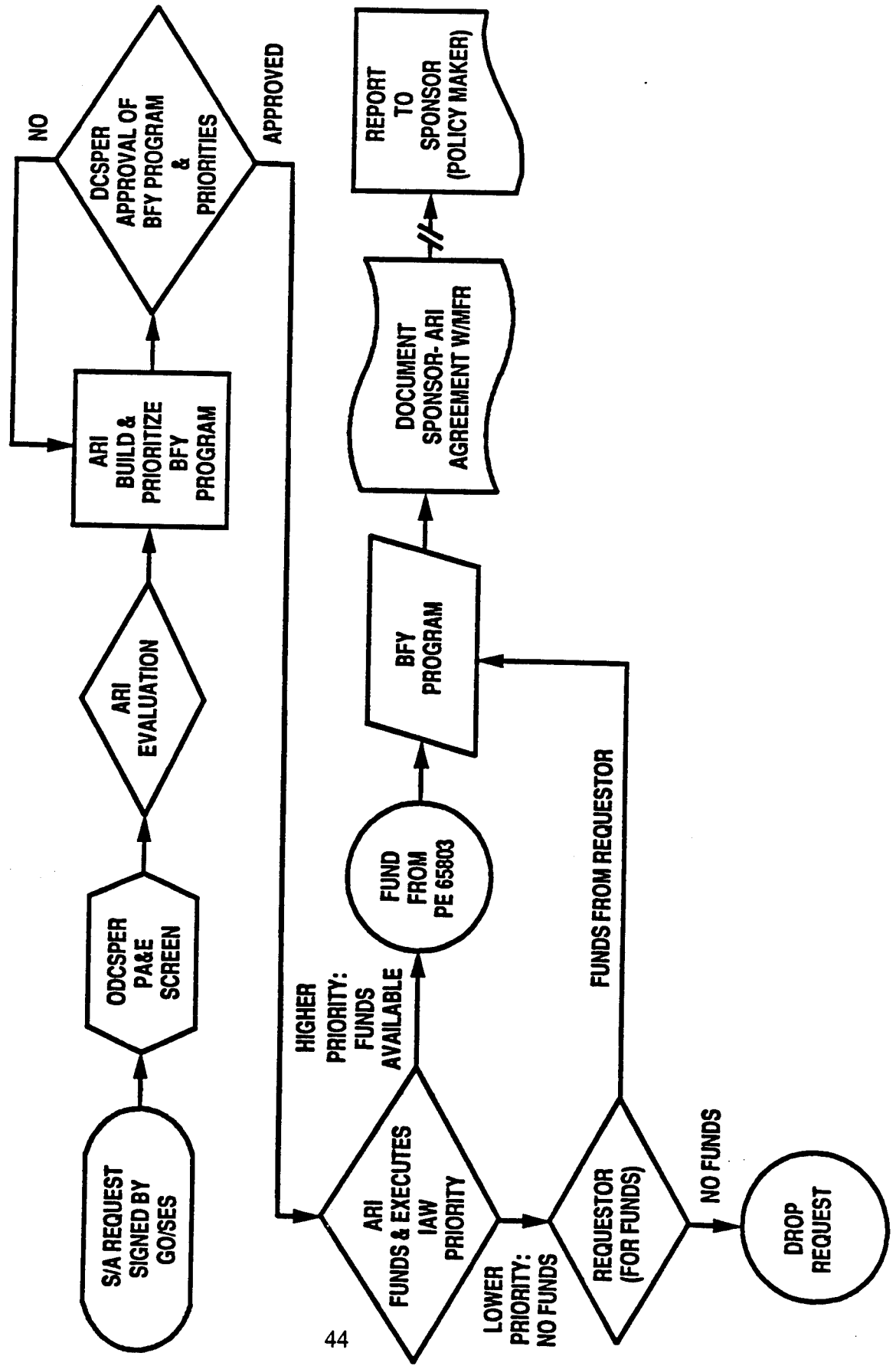
Policy:

- o Each study or analysis request must be signed by a general officer (GO) or senior executive service (SES) member.
- o Each study or analysis in the approved program will be documented by a memorandum for record (MFR), signed by both ARI and the requester, that details ARI's approach and the sponsoring agency's resource commitment and intended use of the study or analysis product.
- o Requests for studies and analyses that are approved by the DCSPER will be funded by appropriated funds in order of priority and will become the core program.
- o Requests falling outside the core program will be considered if the requester provides the necessary funds and contract personnel with required expertise are available.
- o The DCSPER/ADCSPER will approve all major changes to the core program.

Program Development Procedures: ARI develops this program annually for the budget fiscal year (and beyond if required).

- o Each February/March a memorandum that describes the program and the procedures for requesting a study or analysis is distributed to the ARSTAF, MACOMs and to OSD.
- o Requests for program support sent to the DCSPER must be signed by a GO or SES preferably the GO or SES who is directly involved in the policy, doctrine or decision that the study or analysis supports.
- o Each request is screened by the ODCSPER and sent to ARI for disposition, as depicted in Figure 1.
- o The ARI Command Group reviews each request to determine if it is a study or analysis issue within the area of ARI's competence and uses such additional factors as the importance of the issue and whether or not resources (dollars and personnel) are available to complete the effort in the time allotted.
- o Based upon this review, ARI submits the proposed budget fiscal year program to the DCSPER for approval. The DCSPER-approved program becomes the core program.

**FIGURE 1. RESEARCH-BASED PERSONNEL AND TRAINING
STUDY AND ANALYSIS PROGRAM**



- o Requests that fall outside the core program may be met if personnel with the required expertise are available and the requester can provide the necessary funds. In such cases, if approved by Director, ARI, ARI Division Directors will negotiate directly with the requester.
- o Proposed studies and analyses that cannot be performed because of lack of resources are dropped from the final proposed program.
- o Unprogrammed, out-of-cycle studies or analyses may be requested during the fiscal year. However, such requests can be met only if the request is approved by the DCSPER/ADCSPER, ARI funds and personnel are available to accomplish the task within the allotted time, and either the DCSPER prioritizes the request above the funding line or the requester provides the necessary funds.

Section D

ARI

**Research-Based Study and Analysis Program
FY94, FY95 and FY96 Funding**

ARI Research-Based Study and Analysis Program FY94, FY95 and FY96 Funding (\$000)					
Task No.	Task/Work Unit Title	FY94	FY95	FY96	
Manpower and Personnel Research Division					
1131	LEADERSHIP AND ORGANIZATIONAL ANALYSIS	439	392	0	
	Analysis of Alternative Command Post Structures	36	0	0	
	Critical Leader Development Factors in Support of the Art of Battle Command	31	0	0	
	Gender-Integration of Basic Entry Training	157	0	0	
	Critical Leader Development Factors in CTC Data	50	0	0	
	Longitudinal Research on Officer Careers (LROC)	85	310	0	
	Army Career Transition Survey (ACTS)	80	82	0	
1132	SOLDIER ATTITUDES AND OPINIONS	0	367	0	
	Army Survey	0	367	0	
1231	JOB SPECIFIC SELECTION AND CLASSIFICATION	61	92	20	
	Improved NCO Promotion Procedures	38	0	0	
	Self Development Test (SDT) Fairness Analyses	23	0	0	
	Analyses of the Operational Self-Development Test (SDT)	0	92	20	
1234	SF RECRUITING AND SELECTION ENHANCEMENT	0	0	108	

ARI Research-Based Study and Analysis Program FY94, FY95 and FY96 Funding (\$000)					
1331	PERSONNEL POLICY ANALYSIS	555	339	0	
	Analysis on Enlistment, Reenlistment, Promotion, and Separation Policies	96	277	0	
	Annual Updates of ARI Databases	40	57	0	
	Development of a Prototype Officer Personnel Inventory, Cost and Compensation (OPICC) Policy Analysis Model	143	0	0	
	Impact of a Smaller, CONUS-Based Army Upon Promotion, Education and Professional Development Systems	77	5	0	
	Development of a PC-Based Prototype Enlisted Personnel Allocation System (EPAS)	199	0	0	
1332	MARKETING AND ADVERTISING	345	188	0	
	The ARI Army Alumni Survey	185	188	0	
	Survey of Civilian Nurses	160	0	0	
Training Systems Research Division					
2131	ARCHIVE: ANALYSIS OF COMBAT TRAINING CENTER (CTC) PERFORMANCE	862	731	716	
	Strengths and Weaknesses in Indirect Fire, Air Defense and Mobility/Countertermobility Battlefield Operating Systems (BOS) Across the CTCs	403	0	0	
	Lessons Learned by Observer/Controllers at CTCs	90	0	0	